

# SEQUENCE LISTING

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 PENIN, Francois

<120> POLYPEPTIDES F' OF THE HEPATITIS C VIRUS, T EPITOPES,  
 AND THE DIAGNOSTIC AND THERAPEUTIC APPLICATIONS THEREOF

<130> 124238

<140> 10/541,353  
 <141> 2003-12-29

<150> FR03/00094  
 <151> 2003-01-07

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<170> PatentIn version 3.3

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Xaa Gly Xaa Ser Xaa Gly Xaa Xaa Gly Xaa Ser Xaa Xaa Xaa Arg Xaa  
 35 40 45

Xaa Xaa Gly Xaa Asp Gly Ser Cys Xaa Pro Xaa Xaa Xaa Gly Leu Xaa  
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Gly Ala Xaa Xaa Thr Pro Xaa Xaa Gly Xaa Xaa Xaa Trp Val Xaa Ser  
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35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

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Ser Ser Ala

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35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Val Leu Gly Leu Val  
50 55 60

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Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
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Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
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Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Leu Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
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20 25 30

Pro Gly Leu Ser Leu Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Leu Met Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
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20 25 30

Pro Gly Leu Ser Leu Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

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20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Ala  
50 55 60

Gly Ala Leu Pro Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
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Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
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Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

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Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
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Ser Ser Ala

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Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Leu Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Leu Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
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 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
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 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
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 Gly Ala Pro Thr Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
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35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

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Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
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20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Arg Pro Ala Ala Leu Gly Leu Val  
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Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
 50 55 60

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 Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
 50 55 60  
  
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 65 70 75 80



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35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

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35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

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Ser Ser Ala

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20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Pro Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
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Ser Ser Ala

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20 25 30

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35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Ala  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
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Ser Ser Ala

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Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Val  
50 55 60

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Ser Ser Ala

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<220>  
 <223> anti-HCV immunogenic peptide  
 <400> 26

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Gly Ala Leu Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Leu Ser Ala

<210> 27  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide  
 <400> 27

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Val  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 28  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 28

Ser Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Pro Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 29  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 29

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Phe Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Gly Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 30  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 30

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Phe Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Gly Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Gly Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 31  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>

<223> anti-HCV immunogenic peptide

<400> 31

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 32

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 32

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Ile  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 33  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 33

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly His Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Arg Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 34  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 34

Gly Trp Val Cys Ala Arg Gly Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Ala Asp Asn Leu Ser Pro Arg Leu Ala Val Pro Arg Glu Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Leu Asp Gly Ser Cys His Pro Glu Ala Pro Gly Leu Val  
50 55 60



Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 35  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 35

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 36  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 36

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Gln Val Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 37  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 37

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Ala Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 38  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 38

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Ala Gly Arg Val Ile Trp Val Gly Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 39

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 39

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 40  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 40

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30  
  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Leu Ser Met Ala Met Arg Ala  
35 40 45  
  
Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60  
  
Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
65 70 75 80  
  
Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 41  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 41

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30  
  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Leu Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Arg Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 42  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 42

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Leu Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Arg Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 43  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 43

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 44

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 44

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 45

<211> 99

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 45  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45  
  
 Leu Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80  
  
 Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95  
  
 Ser Ser Ala

<210> 46  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 46  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Ile Phe Arg  
85 90 95

Ser Ser Ala

<210> 47  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 47

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Asp Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Ile Ser Trp Gly Ile Phe Arg  
85 90 95

Ser Ser Ala

<210> 48  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 48

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Gln Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45



Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Ile Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 49  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> anti-HCV immunogenic peptide  
 <400> 49

Gly Trp Val Cys Val Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Gln Arg Leu Ala Asn Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Ile Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 50  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> anti-HCV immunogenic peptide  
 <400> 50

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Ile Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 51

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 51

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Val Asp Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 52  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 52

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Ile Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 53  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 53

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 54  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 54

Gly Trp Val Cys Ala Arg Pro Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Leu Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Ile Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 55  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 55

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 56

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 56

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Pro Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 57

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 57

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Lys Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Glu Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 58

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 58

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 59  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide

<400> 59

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly His Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 60  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide

<400> 60

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Thr Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 61  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 61

Gly Trp Val Cys Ala Arg Ser Gly Arg Leu Pro Ser Gly Arg Asn Pro  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 62  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 62

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30



Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 63  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 63

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Arg Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 64  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
<220>

<223> anti-HCV immunogenic peptide

<400> 64

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Thr Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Val Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 65

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 65

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Arg Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Ile Phe Arg  
85 90 95

Ser Ser Ala

<210> 66  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 66

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Leu Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Thr Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 67  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 67

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Leu Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Thr Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 68  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 68

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 69  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> anti-HCV immunogenic peptide  
<400> 69

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Phe Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 70

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 70

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 71

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 71

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Ile  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 72

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 72

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Pro Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 73  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 73

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45  
Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60  
Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80  
Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 74  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 74

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 75  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 75

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Val Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 76  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 76

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15



Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Thr Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 77

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 77

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Thr Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 78

<211> 99

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 78  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Thr Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80  
  
 Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95  
  
 Leu Ser Ala

<210> 79  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 79  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Met Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 80  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 80

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 81  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 81

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 82  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 82

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 83  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> anti-HCV immunogenic peptide  
<400> 83

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 84

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 84

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 85  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide

<400> 85

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Pro Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 86  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide

<400> 86

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 87  
<211> 99  
<212> PRT  
<213> Artificial sequence  
<220>  
<223> anti-HCV immunogenic peptide  
<400> 87

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 88  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
<220>  
<223> anti-HCV immunogenic peptide  
<400> 88

Gly Trp Val Cys Ala Gln Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Pro Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Trp Asp Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Leu Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 89

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 89

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Ser Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Leu Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 90

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide



<400> 90

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Val Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Ile Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Pro Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Met Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Val Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 91

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 91

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 92  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide  
 <400> 92

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Ile Pro Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 93  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide  
 <400> 93

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Ala Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr His Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 94  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 94

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 95  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 95

Gly Trp Val Cys Ala Arg Arg Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Leu Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Lys Ser  
65 70 75 80

Ser Thr Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 96

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 96

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Lys Ser  
65 70 75 80

Ser Thr Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 97

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 97

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 98

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 98

Gly Trp Val Cys Ala Arg Arg Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Pro Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 99  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 99

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30  
  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45  
  
Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60  
  
Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80  
  
Ser Ile Pro Ser His Ala Gly Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 100  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 100

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30  
  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45  
  
Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Gly Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Gly

<210> 101  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 101

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Phe Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Leu Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Met Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 102  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 102

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Leu Pro Ala Ala His Gly Leu Val  
50 55 60

Gly Ala Pro Met Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 103  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 103

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Val Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 104  
<211> 99  
<212> PRT  
<213> Artificial Sequence



<220>

<223> anti-HCV immunogenic peptide

<400> 104

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 105

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 105

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr His Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Pro Pro Val Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 106  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 106

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Leu Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr His Gly Pro Ser Thr Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Pro Pro Val Ala Pro Gly Leu Ala  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 107  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 107

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Ala  
35 40 45

Trp Asp Gly Arg Asp Gly Ser Cys Pro Pro Val Val Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 108  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 108

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Asp Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Thr Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 109  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 109

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Pro Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Asp Gly Gln Asp Gly Ser Cys Pro Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Leu Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 110

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 110

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Leu Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 111

<211> 99

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 111  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Pro  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Val  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
 50 55 60  
  
 Gly Ala Leu Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80  
  
 Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
 85 90 95  
  
 Ser Ser Ala

<210> 112  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 112  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ile Pro Arg Val Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 113  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 113

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Pro Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Pro Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Thr Pro Pro His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 114  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 114

Gly Trp Val Cys Ala Gln Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ile Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Met Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Leu Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 115

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 115

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Thr Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 116

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 116

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
 20 25 30

Thr Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 117

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 117

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30

Thr Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Phe Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala



<210> 118  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 118  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Lys Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80  
  
 Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95  
  
 Ser Ser Ala

<210> 119  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 119  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
 20 25 30  
  
 Ser Gly Leu Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60  
  
 Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 120  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 120

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys Pro Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 121  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 121

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Ile  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 122  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 122

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Phe Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 123  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 123

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 124

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 124

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 125  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 125  
  
 Gly Trp Val Cys Ala Arg Pro Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Thr Ala Pro Gly Leu Gly  
 50 55 60  
  
 Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
 65 70 75 80  
  
 Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95  
  
 Ser Ser Gly

<210> 126  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 126  
  
 Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15  
  
 Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
 35 40 45  
  
 Trp Gly Gly Gln Asp Gly Ser Cys His Pro Thr Ala Pro Gly Leu Gly  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 127  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 127

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Thr Ala Pro Gly Leu Gly  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 128  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 128

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 129  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
<400> 129

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15

Val Ala Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 130  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
<220>

<223> anti-HCV immunogenic peptide

<400> 130

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Val

<210> 131

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 131

Gly Trp Val Cys Ala Arg Pro Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Val Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95



Ser Ser Ala

<210> 132  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 132

Gly Trp Val Cys Ala Arg Ser Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15  
  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
20 25 30  
  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45  
  
Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Val Leu Gly Leu Val  
50 55 60  
  
Gly Ala Pro Gln Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80  
  
Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 133  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 133

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15  
  
Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Val Pro Arg Ala Gly  
20 25 30  
  
Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45  
  
Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Pro Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 134  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 134

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Pro Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Glu Ala Pro Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 135  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 135

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 136  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 136

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ile Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 137  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 137

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Val Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Leu Ser Ala

<210> 138

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 138

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Val Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 139  
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<212> PRT  
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<220>  
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<400> 139

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15

Val Asp Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Ala Gly  
20 25 30

Pro Gly Pro Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 140  
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<400> 140

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Arg Gly Ile Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Val

<210> 141  
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<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 141

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Pro Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Ala  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 142  
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<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 142

Gly Trp Val Cys Ala Arg Pro Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Met Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Val Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 143  
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<220>  
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<400> 143

Gly Trp Val Cys Ala Arg Pro Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Ile Leu Gly Pro Ser Met Ala Thr Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Leu Gly Leu Ile  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Val

<210> 144  
<211> 99

<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 144

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Pro Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Ala Leu Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Ile Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 145  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 145

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr His Gly Pro Ser Met Ala Met Arg Val  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Val Asp Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80



Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 146  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 146

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Ala Gly Asp Asn Leu Ser Pro Arg Leu Ala Gly Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Pro Met Arg Ala  
35 40 45

Trp Gly Gly Arg Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 147  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 147

Gly Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Ser Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Pro Thr Pro Gly Val Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Val Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 148

<211> 99

<212> PRT

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<223> anti-HCV immunogenic peptide

<400> 148

Arg Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Val Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
50 55 60

Gly Ala Pro Arg Thr Pro Gly Ala Gly Arg Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 149

<211> 99

<212> PRT

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<223> anti-HCV immunogenic peptide

<400> 149

Arg Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Glu Gly Asp Asn Leu Ser Pro Arg Leu Ala Asp Pro Arg Val Gly  
 20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Ala Met Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Arg Thr Pro Gly Gly Gly Arg Ala Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 150

<211> 99

<212> PRT

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<220>

<223> anti-HCV immunogenic peptide

<400> 150

Ser Trp Val Cys Ala Arg Leu Gly Arg Leu Pro Ser Gly Arg Asn Leu  
 1 5 10 15

Val Gly Gly Asp Asn Leu Ser Pro Arg Leu Ala Asn Pro Arg Val Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Ala Thr Arg Ala  
 35 40 45

Trp Gly Gly Gln Asp Gly Ser Cys His Pro Ala Ala Pro Gly Leu Val  
 50 55 60

Gly Ala Pro Gln Thr Pro Gly Val Gly His Ala Ile Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Ser Arg Val Ala Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 151  
<211> 99  
<212> PRT  
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<220>  
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Ala Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 20 25 30

Pro Gly Xaa Ser Xaa Gly Thr Xaa Gly Xaa Xaa Xaa Xaa Xaa Arg Ala  
 35 40 45

Xaa Xaa Xaa Xaa Xaa Gly Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 50 55 60

Gly Xaa Xaa Xaa Thr Pro Gly Xaa Xaa Xaa Ala Xaa Xaa Xaa Xaa Ser  
 65 70 75 80

Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ser Trp Gly Xaa Xaa Arg  
 85 90 95

Ser Xaa Xaa

<210> 152  
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<212> PRT  
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<220>  
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<400> 152

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Ser Gly His Ser Leu  
1 5 10 15

Ala Asp Gly Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Met Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro Pro Ala Ala Pro Val His Leu  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Gly Pro Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 153  
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<220>  
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<400> 153

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val His Pro  
50 55 60

Gly Ala Gln Met Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 154  
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<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 154

Asp Trp Val Cys Ala Arg Pro Val Lys Leu Leu Asn Gly His Ser Leu  
1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Thr Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Leu Val His Leu  
50 55 60

Gly Ala Gln Met Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 155  
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<212> PRT  
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<220>  
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<400> 155

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Pro  
1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg Arg Val Arg Ala Glu Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Met Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro Arg Ala Ala Pro Val His Leu  
50 55 60

Gly Ala Gln Met Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Leu Arg Val Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 156

<211> 99

<212> PRT

<213> Artificial Sequence

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<223> anti-HCV immunogenic peptide

<400> 156

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly Arg Ser Leu  
1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Asp Gly Ser Cys Pro His Ala Ala Pro Val His Leu  
50 55 60

Gly Ala Gln Thr Thr Pro Gly Asp Gly Pro Ala Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 157

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<400> 157

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
 1 5 10 15

Ala Asp Asp Gly Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
 35 40 45

Ala Gly Gly Gln Asp Gly Ser Cys Pro Arg Ala Ala Pro Val His Leu  
 50 55 60

Gly Ala Gln Met Thr Pro Gly Asp Gly Pro Ala Ile Trp Val Lys Ser  
 65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
 85 90 95

Ser Ser Ala

<210> 158

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 158

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
 1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg His Val Gly Ala Lys Ala Gly  
 20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
 35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val His Leu  
 50 55 60

Gly Ala Gln Thr Thr Pro Gly Asp Gly Pro Ala Ile Trp Val Lys Ser  
 65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
 85 90 95

Ser Ser Ala

<210> 159  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide

<400> 159

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
 1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
 35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val Gln Leu  
 50 55 60

Gly Ala Gln Thr Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Lys Ser  
 65 70 75 80

Ser Ile Pro Leu Arg Ala Val Ser Pro Thr Ser Trp Gly Thr Ser Arg  
 85 90 95

Ser Ser Ala

<210> 160  
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 <212> PRT  
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<220>  
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<400> 160

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
 1 5 10 15

Ala Asp Asp Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
 20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Met Arg Ala  
 35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val His Leu  
 50 55 60

Gly Ala Gln Thr Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Lys Ser  
 65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 161  
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<400> 161

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
1 5 10 15

Ala Asp Gly Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Asp  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val His Leu  
50 55 60

Gly Ala Gln Met Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Ala Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 162  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
<220>  
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<400> 162

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
1 5 10 15

Ala Asp Gly Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro Arg Ala Ala Leu Val His Leu  
50 55 60

Gly Ala Lys Met Thr Pro Gly Gly Gly Pro Ala Thr Trp Ala Arg Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 163

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 163

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly His Ser Leu  
1 5 10 15

Ala Asp Gly Asp Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val His Leu  
50 55 60

Gly Ala Gln Thr Thr Pro Gly Gly Gly Pro Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 164

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide



<400> 164

Asp Trp Val Cys Ala Arg Arg Val Lys Leu Leu Asn Gly Arg Ser Leu  
1 5 10 15

Ala Asp Gly Glu Ser Leu Ser Pro Arg Arg Val Gly Ala Lys Ala Gly  
20 25 30

Pro Gly Pro Ser Leu Gly Thr Leu Gly Pro Ser Met Val Met Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro His Ala Ala Pro Val Gln Ile  
50 55 60

Gly Pro Gln Met Thr Pro Gly Asp Gly Pro Ala Ile Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Asp Ser Pro Ile Ser Trp Gly Thr Ser Arg  
85 90 95

Ser Ser Ala

<210> 165

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 165

Asp Trp Val Cys Ala Gln Leu Val Arg Leu Gln Ser Gly His Asn Pro  
1 5 10 15

Ala Asp Gly Asp Ser Leu Phe Pro Arg His Ala Arg Ala Glu Asp Gly  
20 25 30

Pro Gly Arg Ser Leu Gly Thr Pro Gly Pro Ser Met Val Thr Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Phe Cys Leu Leu Ala Ala Pro Asp Arg Val  
50 55 60

Gly Ala Pro Thr Thr Pro Gly Glu Gly Pro Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Thr Leu Ser His Ala Gly Ser Pro Ile Ser Trp Gly Ile Phe Arg  
85 90 95

Ser Ser Ala

<210> 166  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
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 <400> 166  
  
 Asp Trp Val Cys Ala Gln Phe Val Lys Leu Pro Ser Gly Gln Asn Pro  
 1 5 10 15  
  
 Ala Thr Gly Gly Ser Leu Ser Pro Arg His Val Gly Ala Arg Ala Gly  
 20 25 30  
  
 Pro Gly Leu Ser Leu Gly Thr Leu Gly Leu Phe Met Ala Met Arg Ala  
 35 40 45  
  
 Val Gly Gly Gln Asp Gly Ser Cys Pro Pro Ala Ala Leu Gly His Leu  
 50 55 60  
  
 Gly Ala Pro Met Thr Pro Gly Glu Gly Leu Ala Thr Trp Val Lys Ser  
 65 70 75 80  
  
 Ser Ile Pro Leu Arg Ala Asp Ser Pro Ile Ser Trp Gly Thr Phe Arg  
 85 90 95  
  
 Ser Ser Ala

<210> 167  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide  
  
 <400> 167  
  
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 1 5 10 15  
  
 Ala Arg Gly Gly Ser Leu Ser Pro Arg Arg Val Val Ala Arg Asp Gly  
 20 25 30  
  
 Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Val Met Arg Ala  
 35 40 45  
  
 Ala Gly Gly Arg Asp Gly Ser Cys Pro Pro Ala Val Leu Gly Arg Ala  
 50 55 60

Gly Ala Gln Met Thr Pro Gly Glu Asp Pro Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu His Ala Gly Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 168

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 168

Asp Trp Val Cys Ala Gln Tyr Val Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Ala Asp Gly Val Ser Leu Ser Pro Arg His Ala Arg Ala Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Thr Glu Met Arg Ala  
35 40 45

Val Gly Gly Gln Asp Gly Phe Cys Pro Pro Ala Val Leu Val Leu Ile  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp Pro Ala Thr Trp Val Arg Ser  
65 70 75 80

Ser Thr Pro Leu His Ala Asp Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 169

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 169

Asp Trp Val Cys Ala Gln Tyr Val Arg Leu Pro Ser Gly Arg Ser Leu  
1 5 10 15

Ala Asn Ser Val Thr Leu Ser Pro Arg Leu Ala Arg Ala Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Ser Thr Gly Ile Arg Ala  
 35 40 45

Val Gly Trp Gln Asp Gly Ser Cys Pro Pro Val Val Leu Ala Leu Val  
 50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp Pro Ala Thr Leu Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu Arg Val Asp Ser Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 170  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> anti-HCV immunogenic peptide

<400> 170

Asn Trp Val Cys Ala Lys Tyr Val Arg Leu Pro Ser Asp His Asn Leu  
 1 5 10 15

Ala Asp Gly Val Ser Leu Pro Pro Arg His Ala Arg Ala Arg Ala Gly  
 20 25 30

Pro Gly Pro Ser Pro Gly Thr Leu Gly Pro Ser Thr Gly Met Arg Ala  
 35 40 45

Val Val Gly Gln Asp Gly Ser Cys Pro Pro Ala Val Leu Ala Pro Ala  
 50 55 60

Gly Ala Lys Met Thr Pro Gly Val Asp Pro Ala Thr Trp Val Arg Ser  
 65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Leu Pro Thr Ser Trp Gly Thr Phe Arg  
 85 90 95

Ser Ser Ala

<210> 171  
 <211> 99  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 171

Asp Trp Val Cys Ala Gln Tyr Val Lys Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Ala Asp Gly Val Ser Leu Ser Pro Arg His Ala His Ala Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Leu Gly Pro Ser Met Gly Met Arg Ala  
35 40 45

Ala Val Gly Gln Asp Gly Phe Cys Pro Pro Val Val Leu Ala Leu Val  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp Pro Ala Thr Trp Val Lys Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 172

<211> 99

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 172

Asp Trp Val Cys Ala Gln Cys Val Asn Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Ala Asp Gly Gly Ser Leu Ser Pro Arg His Ala Glu Ala Arg Ala Gly  
20 25 30

Pro Gly Pro Ser Leu Gly Thr Leu Gly Pro Ser Met Gly Met Arg Ala  
35 40 45

Val Gly Gly Gln Asp Gly Ser Cys Leu Pro Val Ala Pro Ala Leu Val  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp His Ala Thr Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Val Asp Ser Pro Ile Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Leu Val

<210> 173  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 173

Asp Trp Val Cys Ala Gln Tyr Val Arg Leu Pro Ser Gly His Asn Pro  
1 5 10 15

Ala Asp Gly Ala Ser Leu Ser Pro Arg Arg Ala His Ala Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Leu Gly Thr Pro Gly Pro Phe Met Gly Thr Arg Ala  
35 40 45

Ala Val Gly Gln Asp Gly Ser Cys Pro Pro Ala Val Pro Asp Pro Ala  
50 55 60

Gly Ala Gln Met Thr Pro Gly Ala Asp Pro Ala Thr Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Leu Arg Ala Asp Ser Leu Thr Ser Trp Gly Ile Phe Arg  
85 90 95

Ser Ser Ala

<210> 174  
<211> 99  
<212> PRT  
<213> Artificial Sequence  
  
<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 174

Ser Trp Val Cys Val Gln Cys Ala Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Ala Val Gly Ala Asn Pro Ser Pro Gly Arg Ala Glu Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Tyr Met Gly Met Arg Ala  
35 40 45

Ala Gly Gly Gln Gly Gly Ser Cys Pro Arg Ala Ala Leu Ala His Arg  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp His Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser Arg Ala Asp Ser Pro Thr Ser Trp Gly Ile Phe Arg  
85 90 95

Ser Ser Ala

<210> 175  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 175

Gly Trp Val Cys Val Gln Cys Thr Arg Leu Pro Ser Gly Arg Asn Leu  
1 5 10 15

Ala Val Gly Ala Asn Pro Ser Pro Gly Arg Ala Glu Leu Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Tyr Met Gly Met Arg Ala  
35 40 45

Ala Gly Gly Gln Asp Gly Ser Cys Pro Arg Ala Ala Leu Ala His Arg  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp Pro Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Ile Pro Ser His Ala Asp Ser Pro Ala Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Ser Ala

<210> 176  
<211> 99  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 176

Ser Trp Val Cys Val Arg Cys Ala Arg Leu Pro Ser Gly His Asn Leu  
1 5 10 15

Ala Val Gly Ala Ser Pro Ser Pro Gly Arg Ala Glu Pro Arg Ala Gly  
20 25 30

Pro Gly Leu Ser Pro Gly Thr Leu Gly Pro Tyr Met Gly Met Arg Ala  
35 40 45

Ala Asp Gly Gln Gly Gly Ser Cys Pro Pro Ala Ala Leu Ala His Arg  
50 55 60

Gly Ala Gln Met Thr Pro Gly Val Asp Pro Ala Ile Trp Val Arg Ser  
65 70 75 80

Ser Thr Pro Ser His Ala Asp Ser Pro Thr Ser Trp Gly Thr Phe Arg  
85 90 95

Ser Gln Ala

<210> 177  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 177

Ala Pro Gly Trp Val Cys Ala Arg Leu  
1 5

<210> 178  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 178

Ala Leu Asp Trp Val Cys Ala Arg Arg  
1 5

<210> 179  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 179

Ala Pro Gly Trp Val Cys Ala Arg Gln  
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<210> 180  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 180

Ala His Val Trp Val Cys Ala Arg Arg  
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<210> 181  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
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<400> 181

Ala Gln Leu Trp Val Cys Val Gln Cys  
1 5

<210> 182  
<211> 9  
<212> PRT  
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<220>  
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<400> 182

Ala Gln Leu Trp Val Cys Val Arg Arg  
1 5

<210> 183  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 183

Ala Pro Gly Trp Val Cys Ala Arg Pro  
1 5

<210> 184  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 184

Ala Pro Ser Trp Val Cys Ala Arg Leu  
1 5

<210> 185  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 185

Ala Pro Gly Trp Val Cys Ala His Leu  
1 5

<210> 186  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 186

Ala Pro Gly Trp Val Cys Ala Gln Leu  
1 5

<210> 187  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 187

Ala Leu Gly Trp Val Cys Ala Arg Leu  
1 5

<210> 188  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 188

Ala Pro Gly Trp Val Cys Val Arg Leu  
1 5

<210> 189  
<211> 9  
<212> PRT  
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<220>

<223> anti-HCV immunogenic peptide  
 <400> 189  
 Ala Pro Val Trp Val Cys Ala Arg Leu  
 1 5

<210> 190  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
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 <400> 190  
 Ala Gln Gly Trp Val Cys Ala Arg Arg  
 1 5

<210> 191  
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 <212> PRT  
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<220>  
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 <400> 191  
 Ala Pro Gly Trp Val Cys Ala Arg Ser  
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<210> 192  
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 <212> PRT  
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<220>  
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 <400> 192  
 Ala Pro Arg Trp Val Cys Ala Arg Leu  
 1 5

<210> 193  
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 <212> PRT  
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<220>  
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 <400> 193  
 Ala Pro Glu Trp Val Cys Ala Arg Arg  
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<210> 194  
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<212> PRT  
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 Ala His Asp Trp Val Cys Ala Gln Cys  
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 <210> 196  
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 <400> 196  
  
 Gly His Asp Trp Val Cys Ala Arg Arg  
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 <223> anti-HCV immunogenic peptide  
  
 <400> 197  
  
 Ala His Asp Trp Val Cys Ala Arg Arg  
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 <210> 198  
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 <400> 198  
  
 Ala Arg Asp Trp Val Cys Ala Arg Arg  
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<210> 199  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
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 <400> 199

Ala Gln Asp Trp Val Cys Ala Arg Arg  
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<210> 200  
 <211> 9  
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 <220>  
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 <400> 200

Ala His Asp Trp Val Cys Ala Arg Pro  
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<210> 201  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
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 <400> 201

Ala Pro Gly Trp Val Cys Ala Arg Arg  
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<210> 202  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
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 <400> 202

Val Pro Glu Trp Val Cys Ala Arg Arg  
 1 5

<210> 203  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> anti-HCV immunogenic peptide

<400> 203

Ala Leu Tyr Trp Val Cys Ala Leu His  
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<210> 204

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 204

Ala Leu Gly Trp Val Cys Ala Arg Arg  
1 5

<210> 205

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 205

Ala Pro Gly Trp Val Cys Ala Gln Arg  
1 5

<210> 206

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 206

Ala Pro Ser Trp Val Cys Val Gln Cys  
1 5

<210> 207

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-HCV immunogenic peptide

<400> 207

Ala Leu Asp Trp Val Cys Ala Arg Leu  
1 5

<210> 208

<211> 9

<212> PRT

<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 208

Ala Pro Ser Trp Val Cys Val Gln Tyr  
1 5

<210> 209  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 209

Ala Arg Val Trp Val Cys Ala Arg Arg  
1 5

<210> 210  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 210

Ala Pro Gly Trp Val Cys Val Gln Cys  
1 5

<210> 211  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 211

Ala Arg Ala Trp Val Cys Ala Arg Arg  
1 5

<210> 212  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide  
  
<400> 212

Ala Leu Val Trp Val Cys Ala Arg Arg  
1 5

<210> 213  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 213

Ala Arg Val Trp Val Cys Ala Arg Gln  
1 5

<210> 214  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 214

Ala Leu Gly Trp Val Cys Ala Arg Leu  
1 5

<210> 215  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 215

Ala Pro Asp Trp Val Cys Ala Gln Leu  
1 5

<210> 216  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 216

Ala Pro Asp Trp Val Cys Ala Arg Leu  
1 5

<210> 217  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 217



Ala Leu Gly Trp Val Cys Ala Gln Leu  
1 5

<210> 218  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 218

Ala His Gly Trp Val Cys Ala Arg Arg  
1 5

<210> 219  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 219

Ala His Asp Trp Val Cys Ala Pro Gln  
1 5

<210> 220  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> anti-HCV immunogenic peptide

<400> 220

Ala Pro Gly Trp Val Cys Val Arg Gln  
1 5

<210> 221  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 221

Ala His Asn Trp Val Cys Ala Lys Tyr  
1 5

<210> 222  
<211> 9  
<212> PRT  
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<220>

<223> anti-HCV immunogenic peptide  
 <400> 222  
 Ala Leu Asp Trp Val Cys Ala Arg Arg  
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<210> 223  
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<220>  
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 <400> 223  
 Ala Leu Asp Trp Val Cys Ala Gln Arg  
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<210> 224  
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 <212> PRT  
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<220>  
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 <400> 224  
 Ala Pro Gly Trp Val Cys Ala Gln Gln  
 1 5

<210> 225  
 <211> 9  
 <212> PRT  
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<220>  
 <223> anti-HCV immunogenic peptide  
 <400> 225  
 Ala Pro Ser Trp Val Cys Val Cys Arg  
 1 5

<210> 226  
 <211> 9  
 <212> PRT  
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<220>  
 <223> anti-HCV immunogenic peptide  
 <400> 226  
 Ala Gln Gly Trp Val Cys Ala Arg Leu  
 1 5

<210> 227  
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<212> PRT  
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<220>  
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<400> 227

Asp Leu Gly Trp Val Cys Ala Arg Pro  
1 5

<210> 228  
<211> 9  
<212> PRT  
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<220>  
<223> anti-HCV immunogenic peptide

<400> 228

Ala Leu Val Trp Val Cys Ala Arg Leu  
1 5

<210> 229  
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